

## Abstract

A parallel lookup engine and a method for a high-speed packet forwarding in a network router is provided. The parallel lookup engine includes: multiple lookup engines for performing packet forwarding lookup in parallel in the network router; and a selector for selecting and outputting the longest one of the lookup results performed by the multiple lookup engines. The parallel lookup method includes: (a) step of providing information about a desired key to multiple lookup engines; (b) step of identifying whether the provided key exists in each lookup engine; (c) step of retrieving a prefix tree and returning the information about the desired key in case the desired key exists in each lookup engine based on the result of step (b); and (d) step of selecting and outputting the longest value of the multiple data returned in step (c).

[Representative Drawing]

FIG. 2